



EES – Industry Performance 1999 - 2007

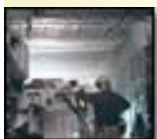
John Francis Waudby
Senior Inspector of Electrical Engineering
Mine Safety Operations





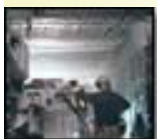
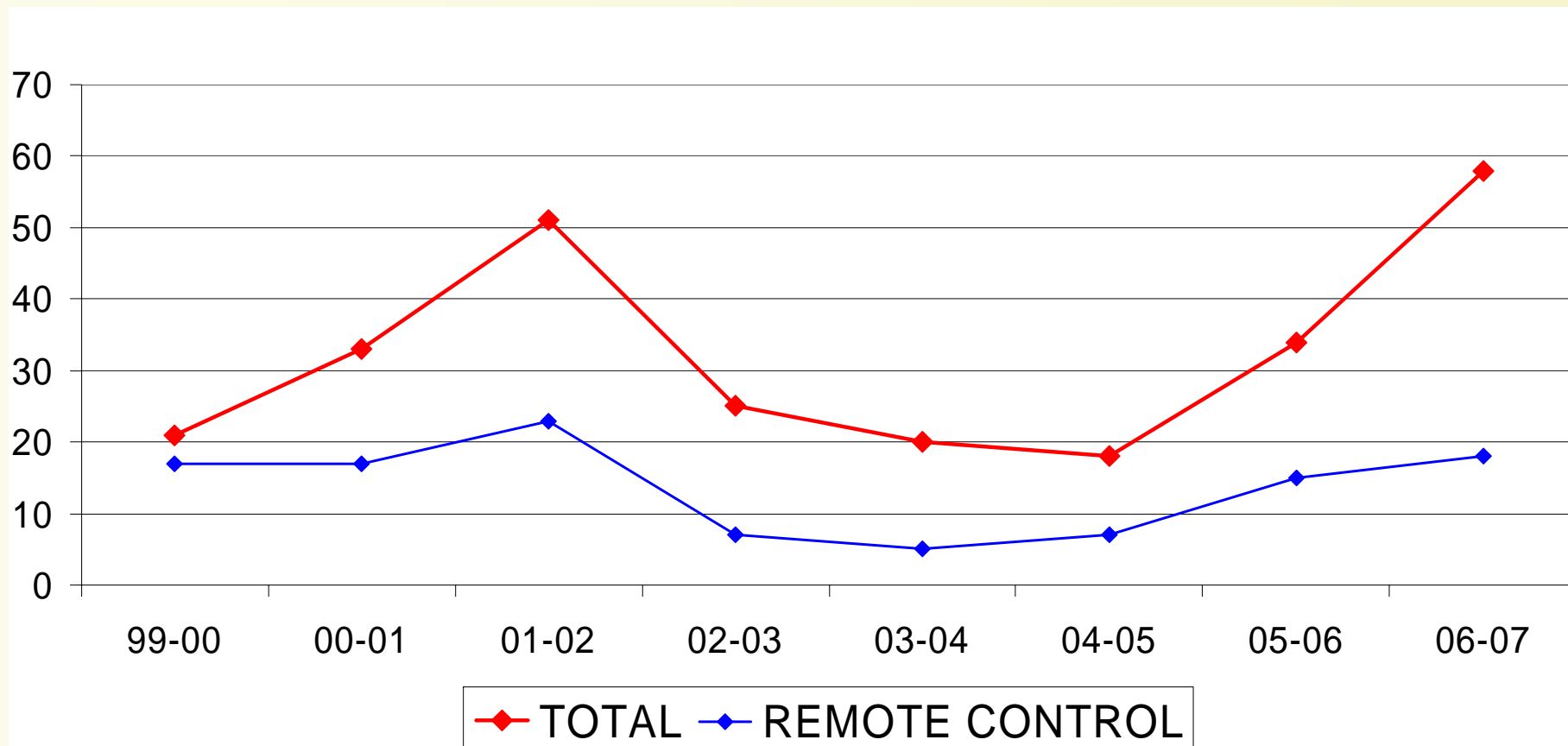
UNPLANNED MOVEMENTS 1999-2007

ELECTRICAL, ELECTRO/HYD/MECH
CAUSATION



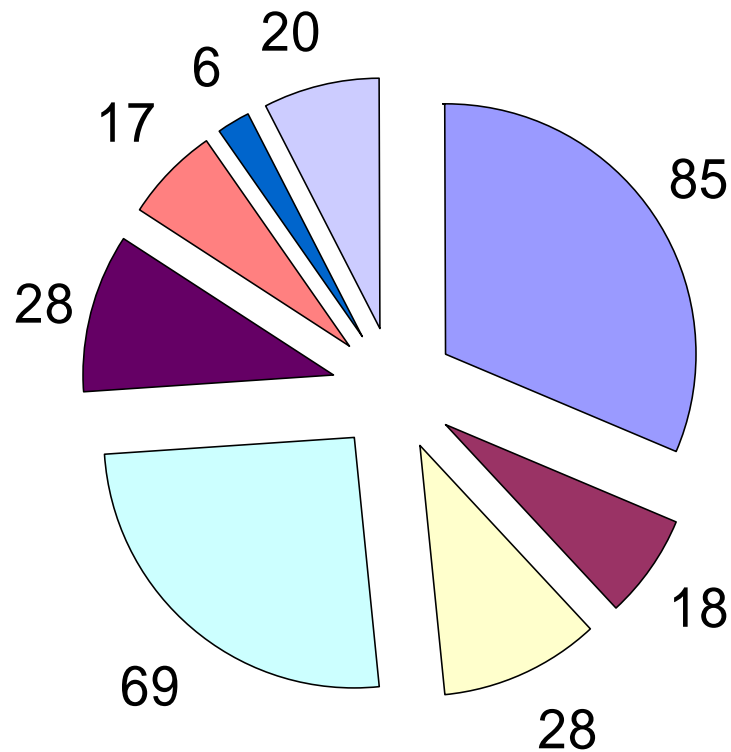


UNPLANNED MOVEMENT OF MACHINES





TYPE OF M/C

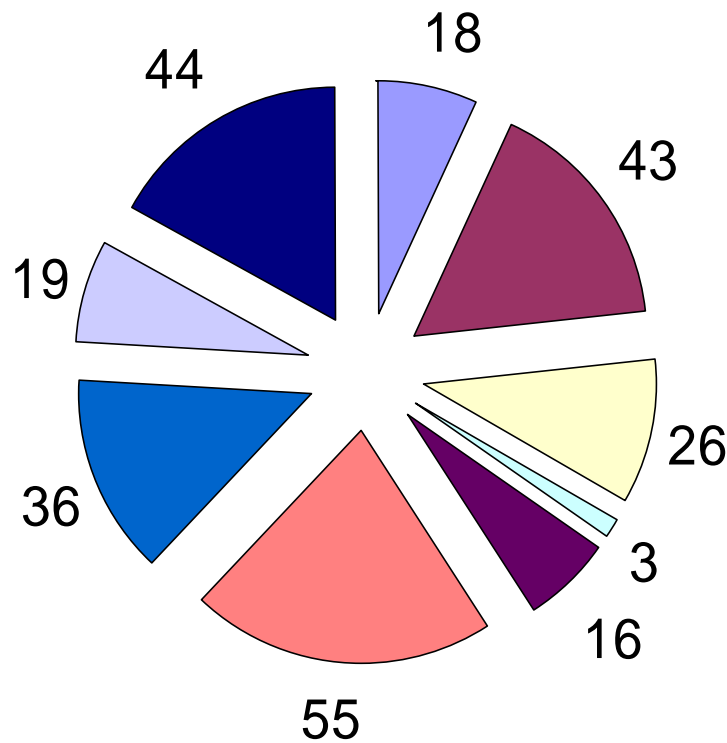


- CONTINUOUS MINER
- SHEARER
- WINDER
- LONGWALL CHOCK
- SHUTTLECAR
- AFC/CV
- LHD
- OTHER





CAUSAL FACTORS



- FOOTSWITCH
- ELECTRICAL HARDWARE
- CIU
- RADIO INTERFERENCE
- HUMAN ERROR
- ELECTRO - HYDRAULIC /MECH
- TRANSMITTER
- SOFTWARE
- UNKNOWN



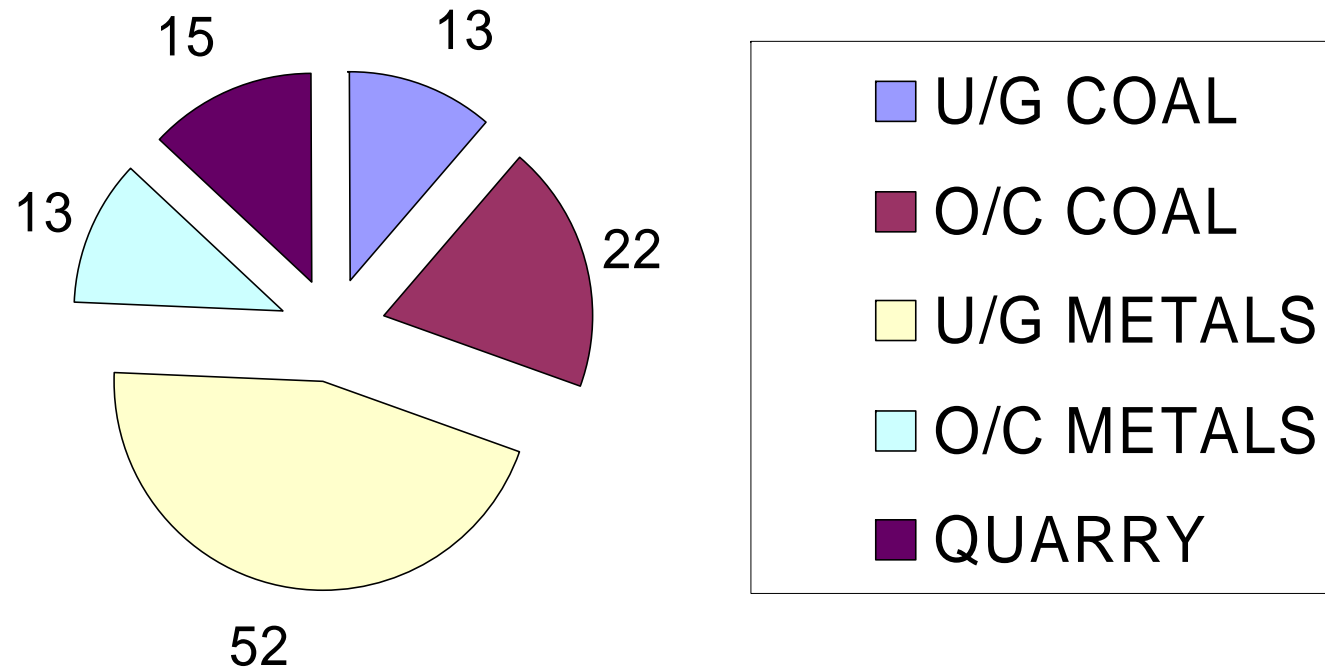


FIRES 1999-2007

ELECTRICAL CAUSATION

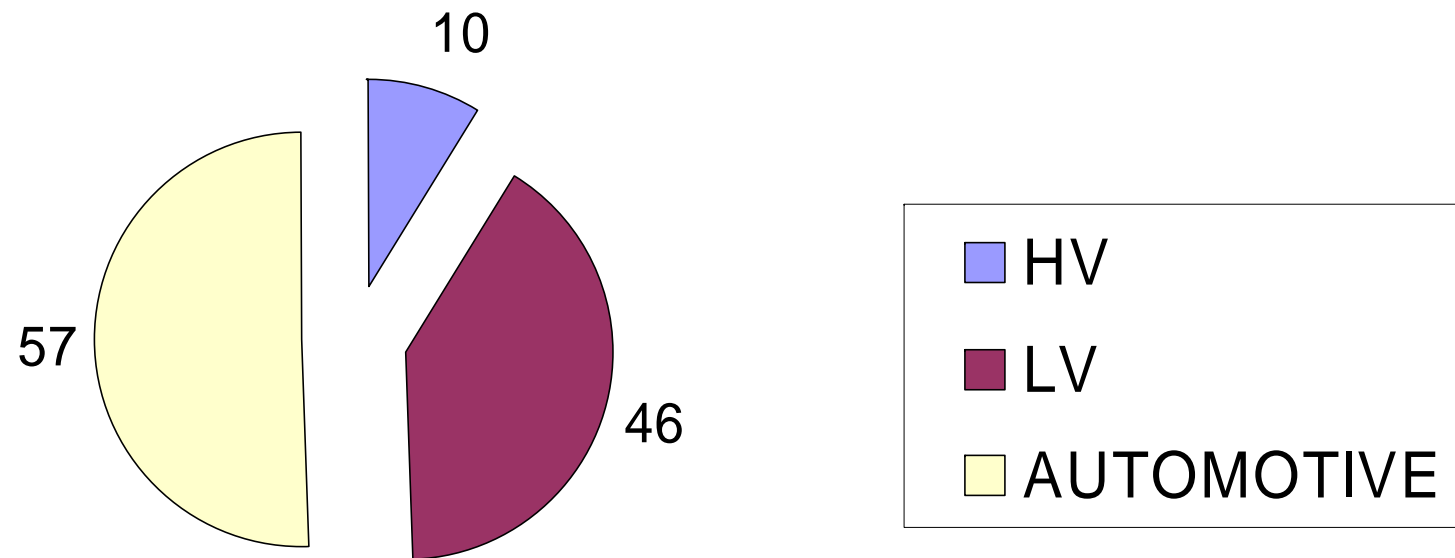


ELECTRICAL FIRES 1999-2007 TYPE OF MINE





VOLTAGE SOURCE



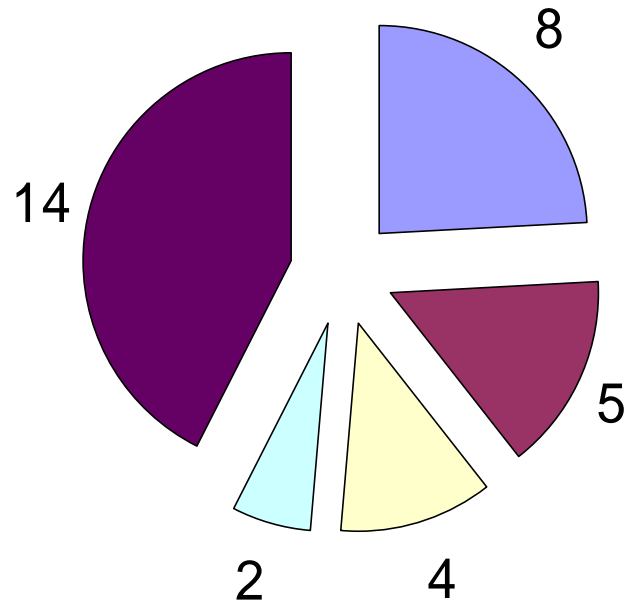


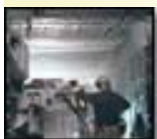
CONTACT WITH HV EQUIPMENT





CONTACT WITH HV EQUIPMENT (OHL, CABLES) 1999-2007



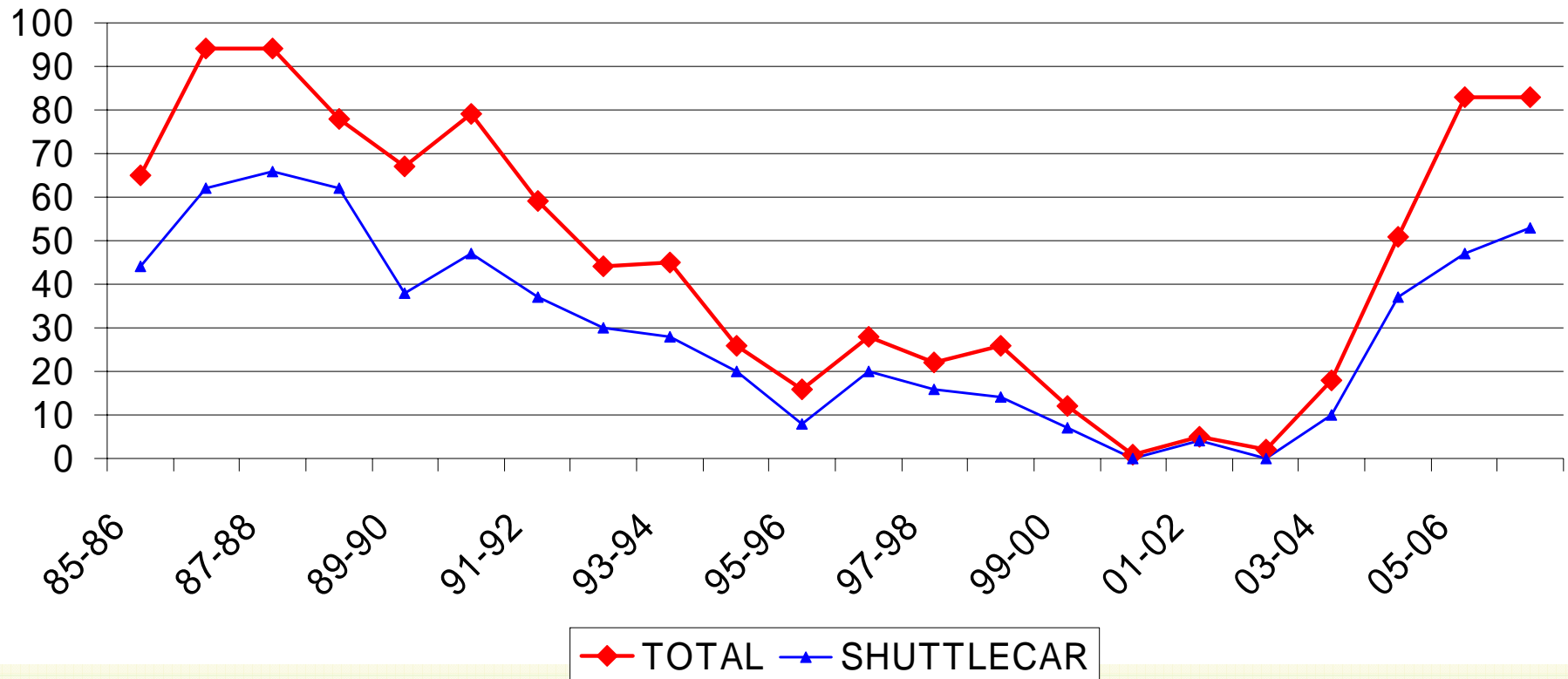


HAZARDOUS ZONES

CABLES & Ex PLANT

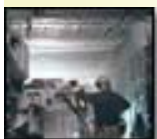
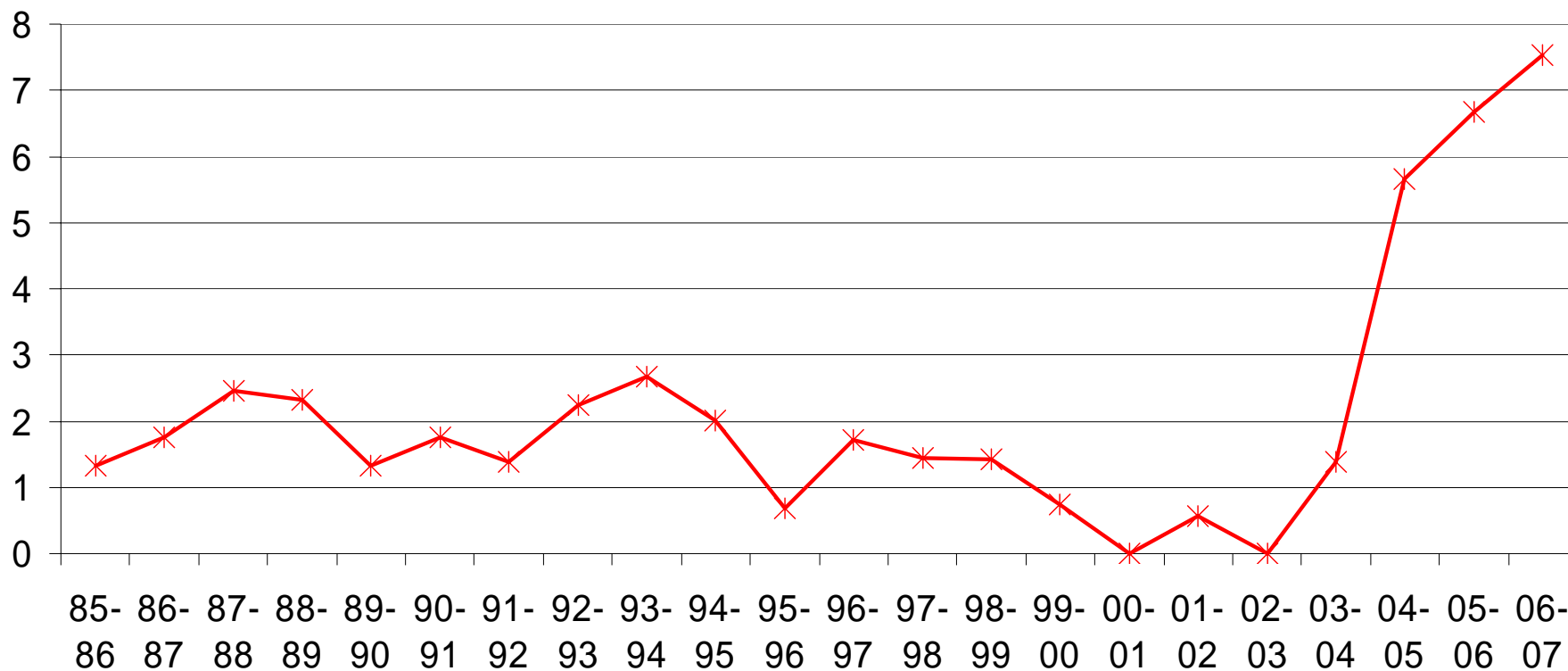


CABLE ARCING IN A HAZARDOUS ZONE



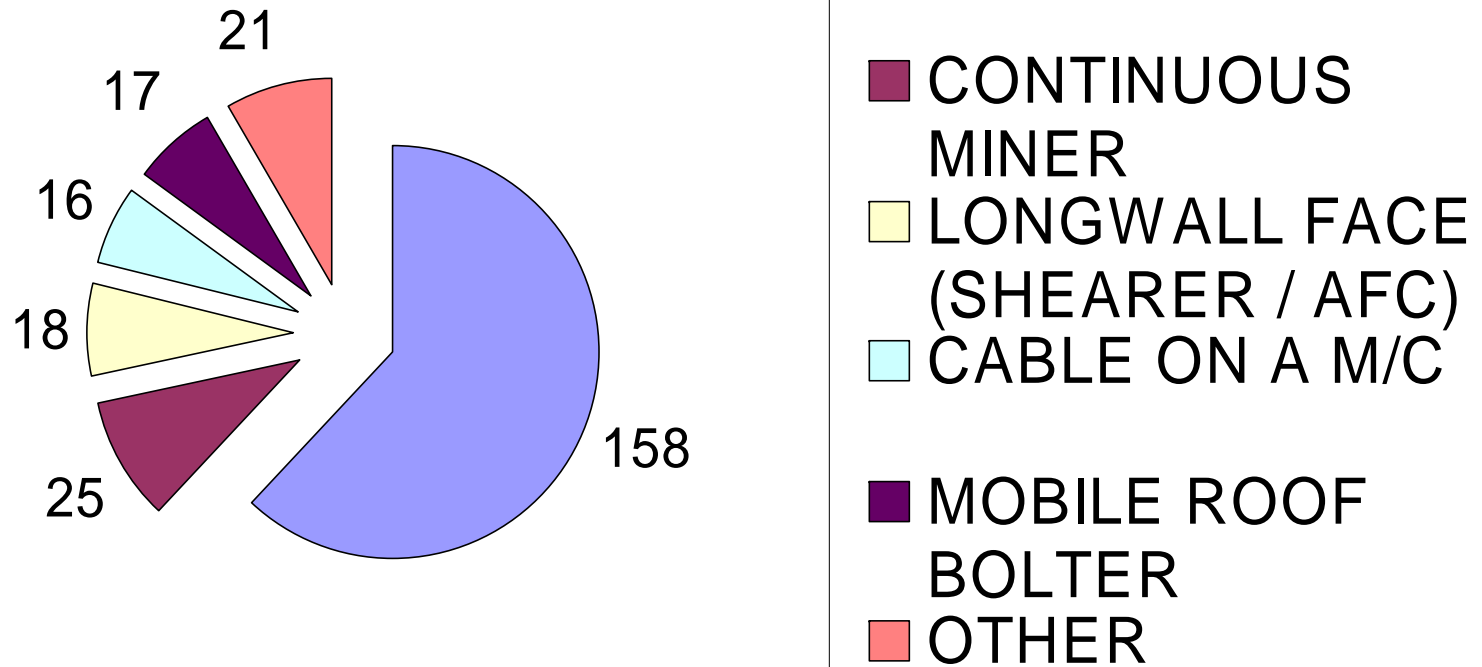


SHUTTLECAR ARCS PER MILLION TONNE



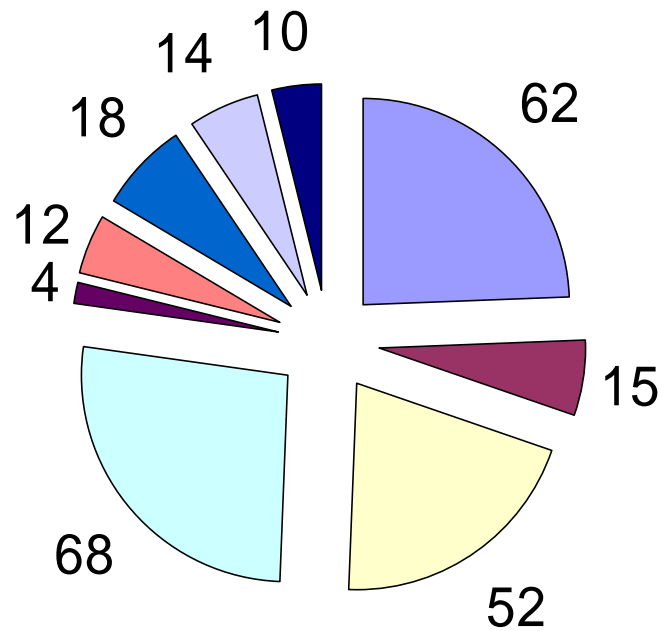


BY MACHINE TYPE 1999-2007





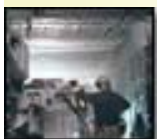
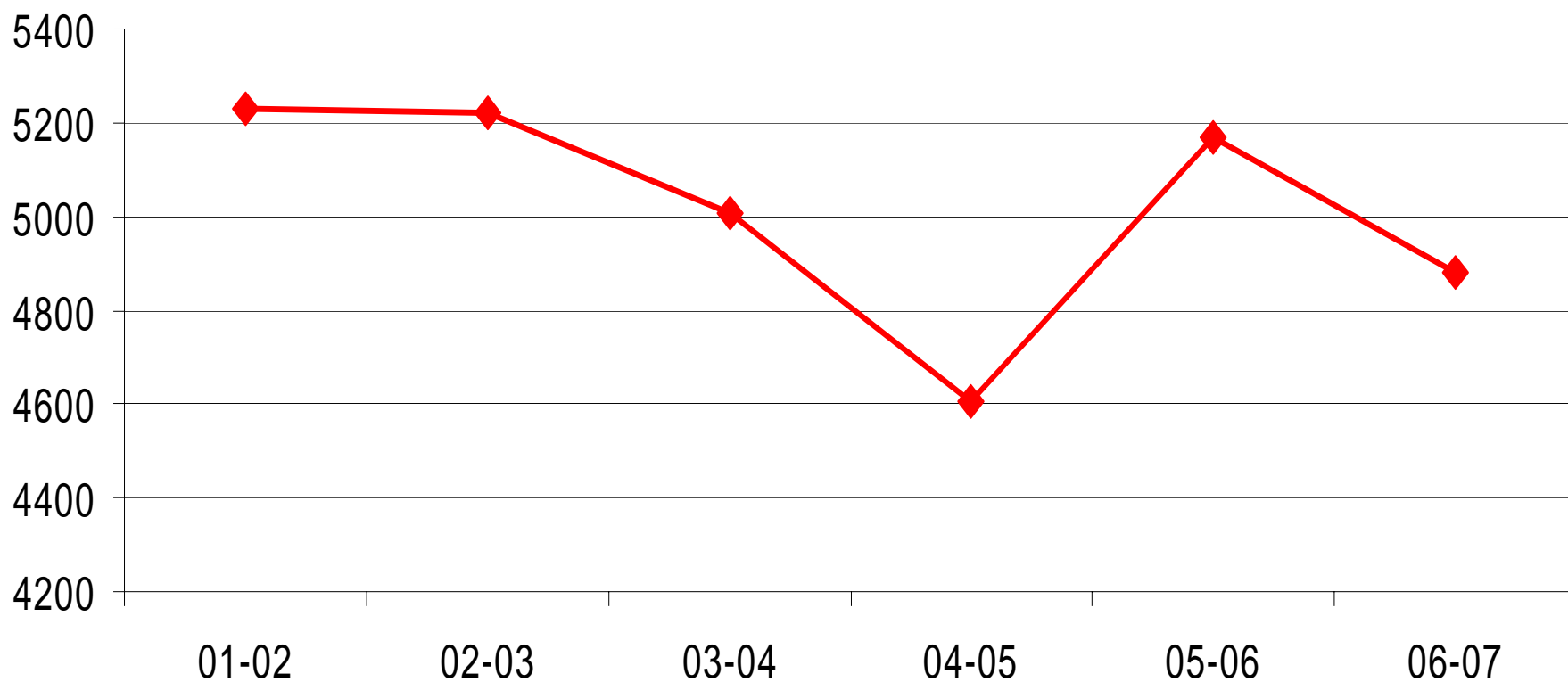
CAUSAL FACTOR 1999-2007

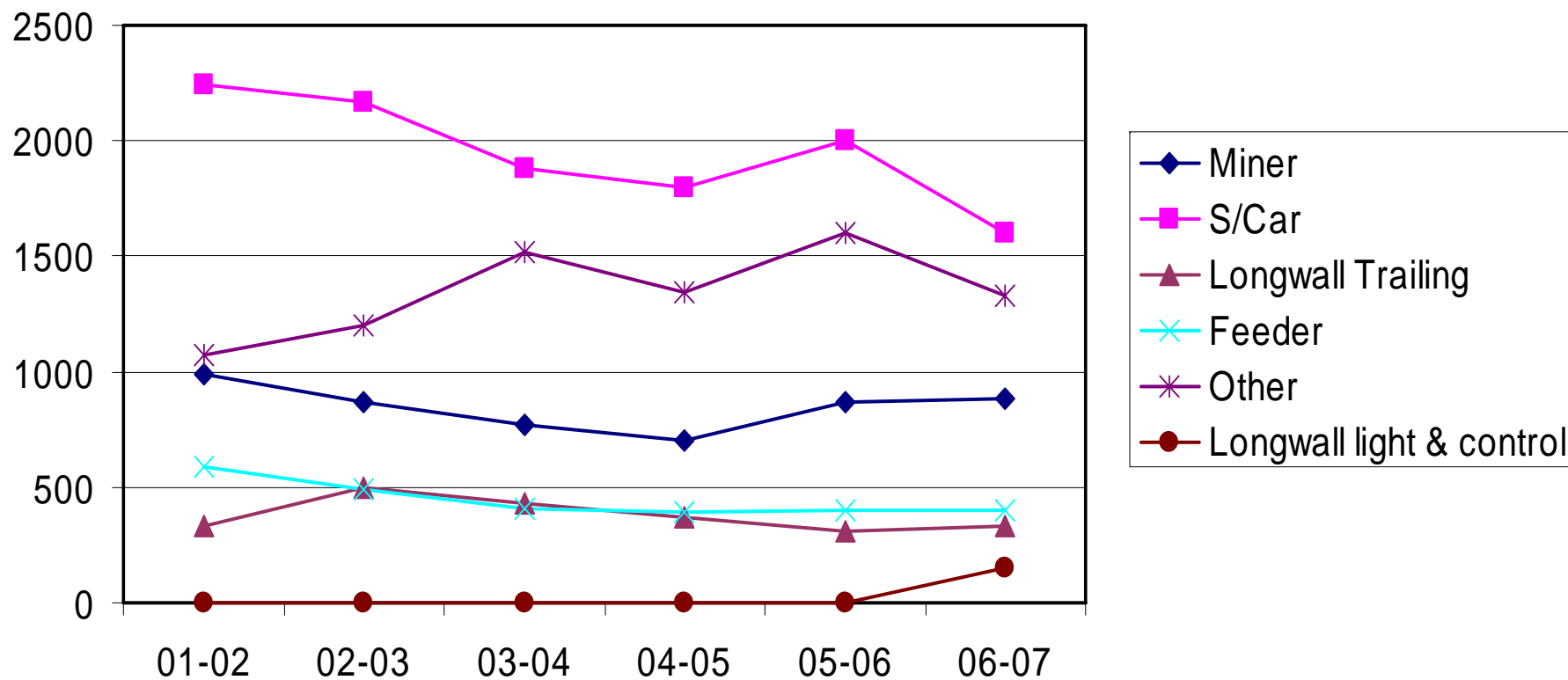
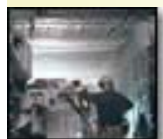


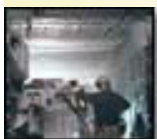
- CABLE REEL, ANCHOR SHEAVES ETC
- BACK SPOOL
- OPERATOR ERROR
- OTHER M/C
- OLD REPAIR FAILED
- ROOF / RIB OBJECT
- POOR MECHANICAL PROTECTION / MISSING PART
- UNKNOWN
- WEAR AND TEAR



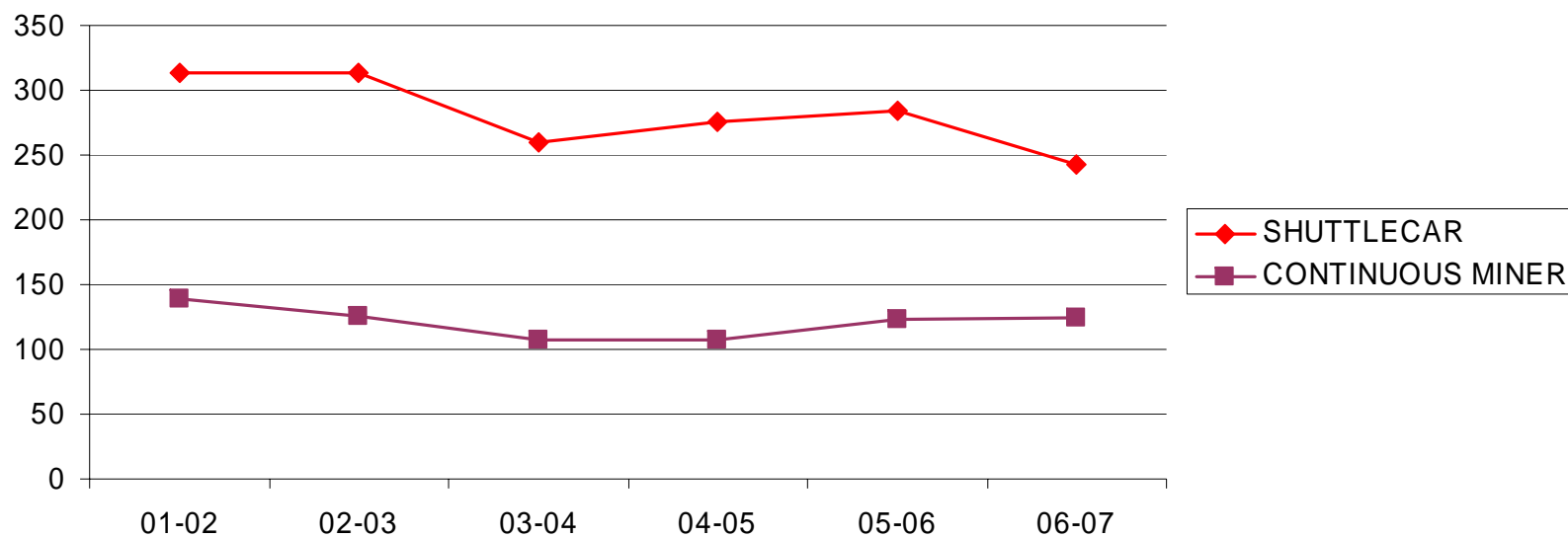
TOTAL CABLES DAMAGED





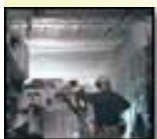
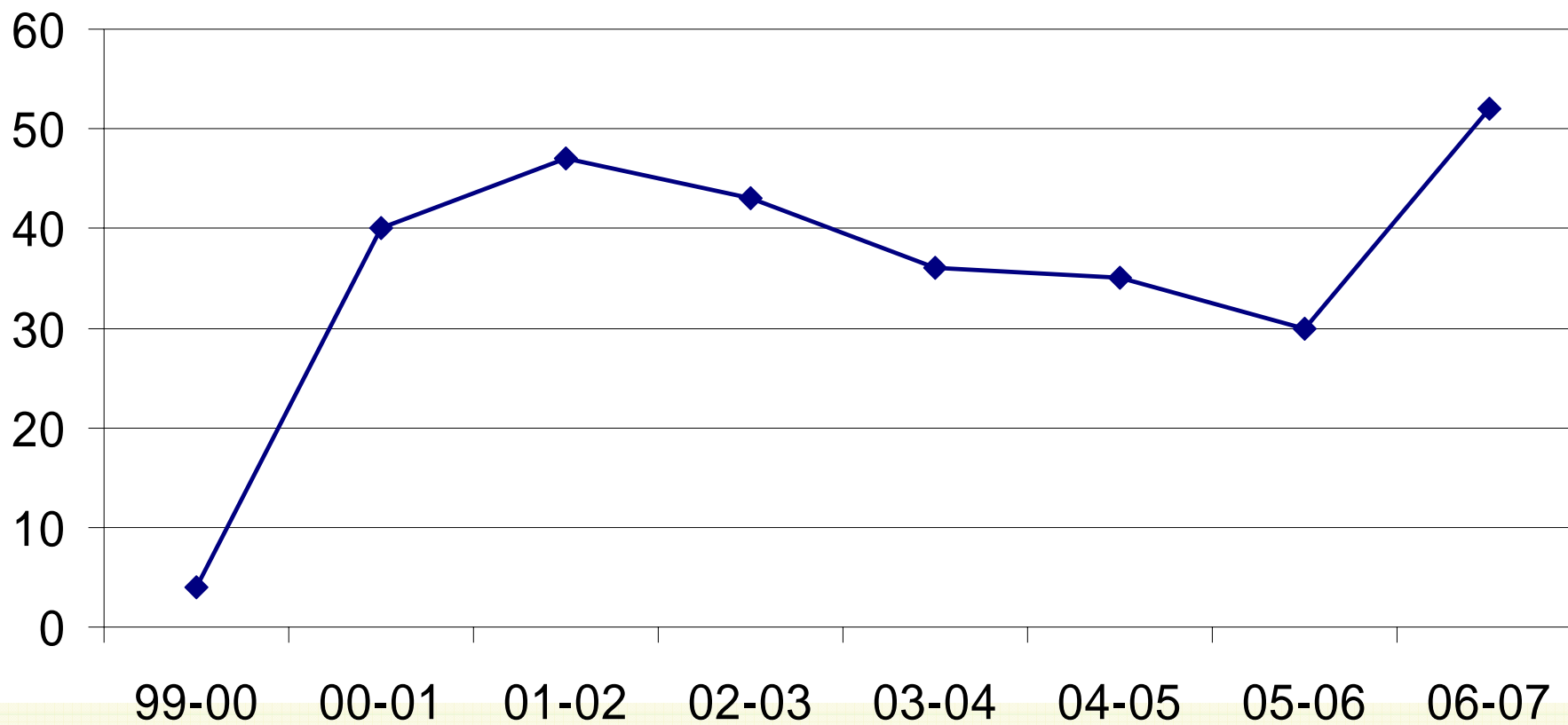


CONTINUOUS MINER SECTION CABLE DAMAGE / MILLION TONNE



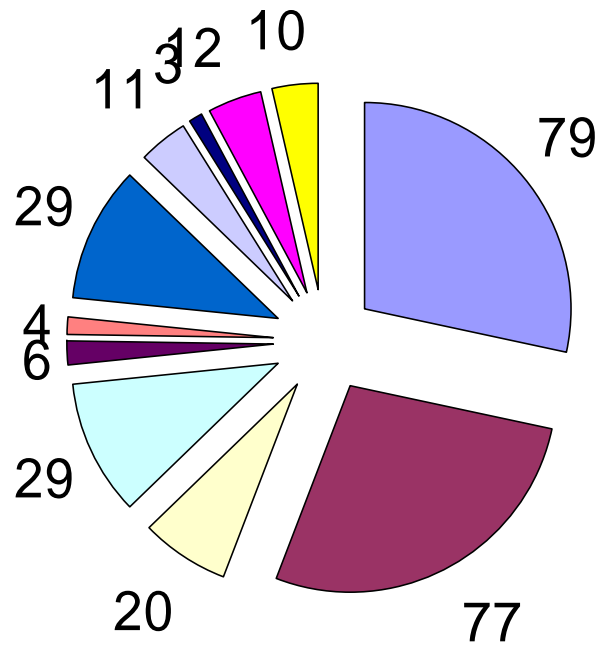


TOTAL FAILURE OF Ex



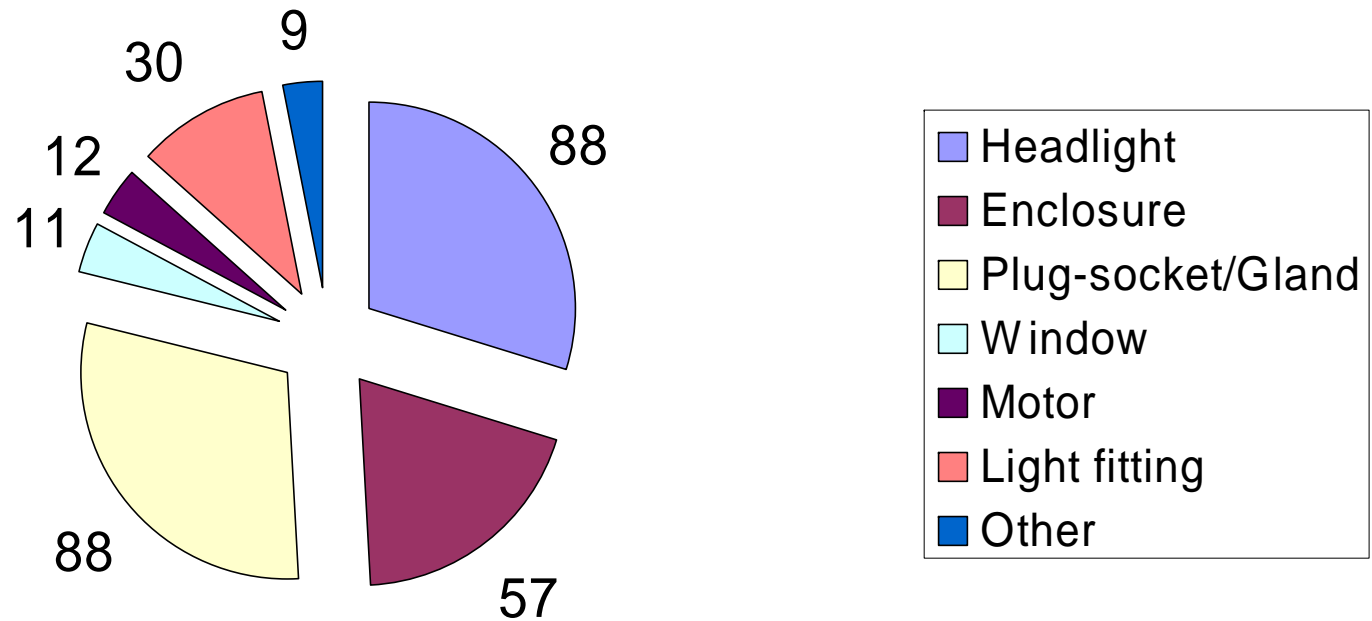


TYPE OF EQUIPMENT



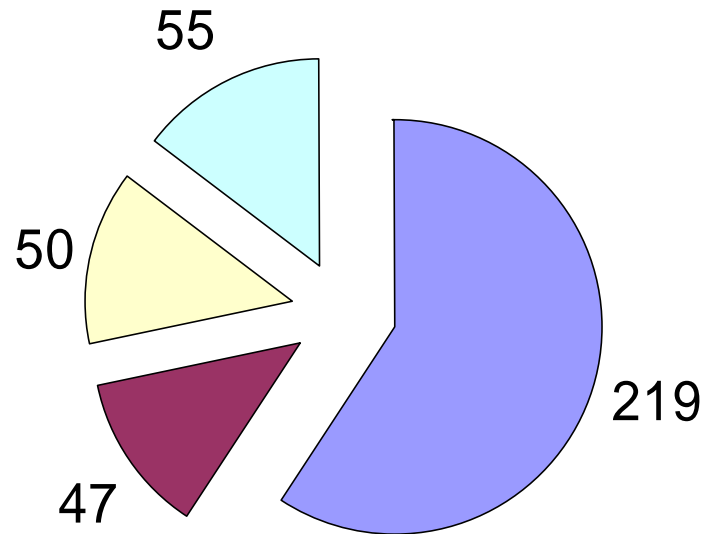


COMPONENT DAMAGED





CAUSAL FACTOR



Impact/Debris

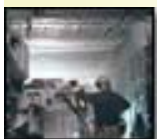
Manufacture/Repair defect

Human error/maintenance failure

Unknown

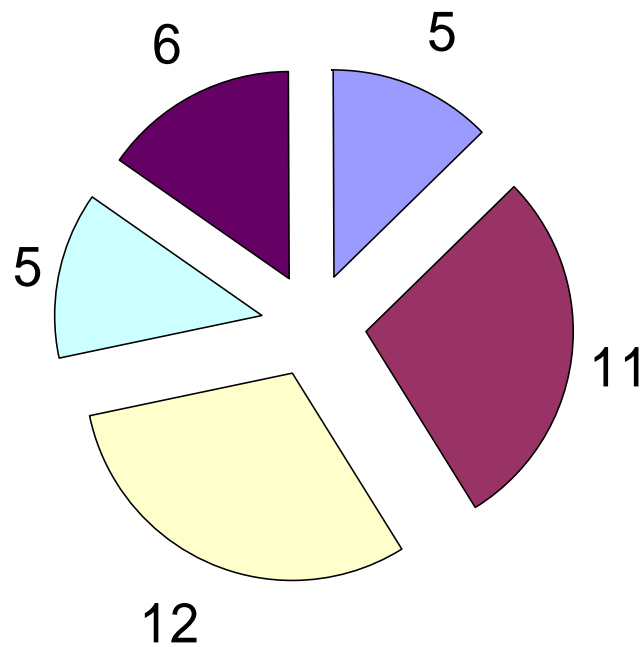


ELECTRIC SHOCKS





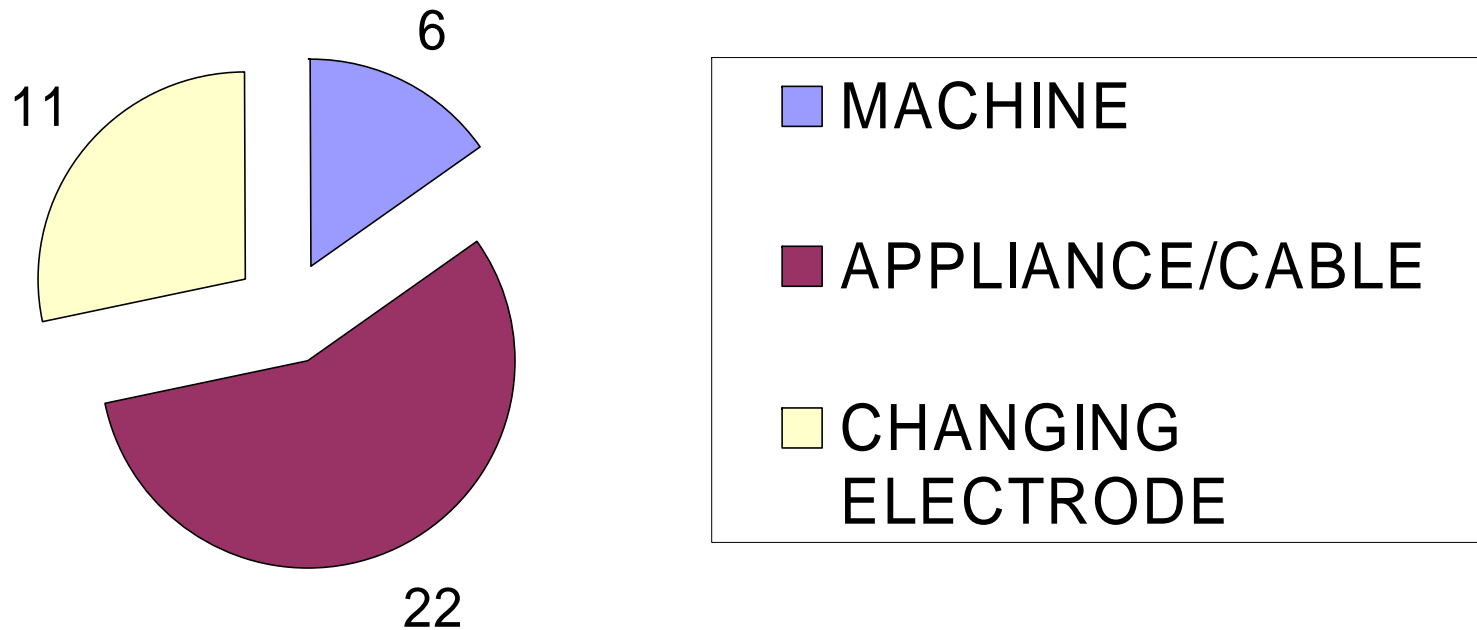
WELDING ELECTRIC SHOCKS BY MINE TYPE



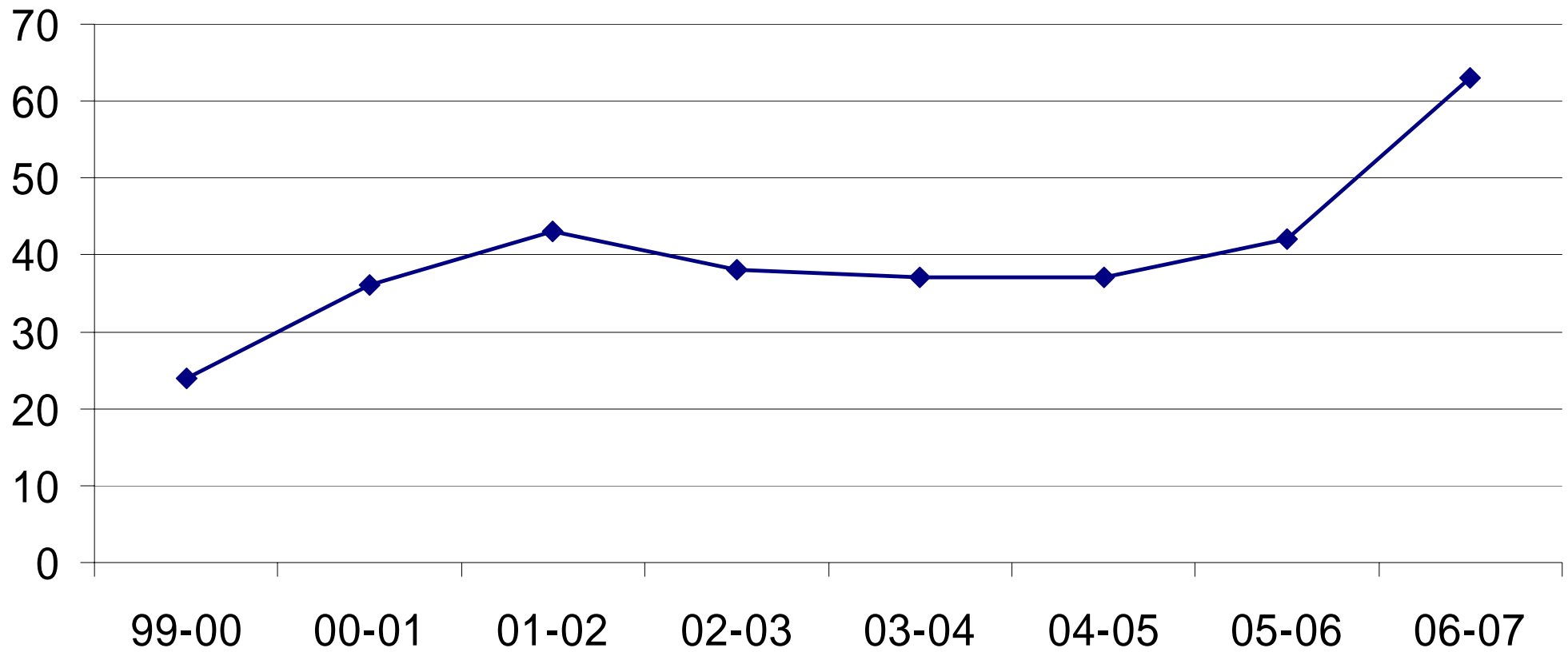
- U/G COAL
- O/C COAL
- U/G METALS
- O/C METALS
- QUARRY



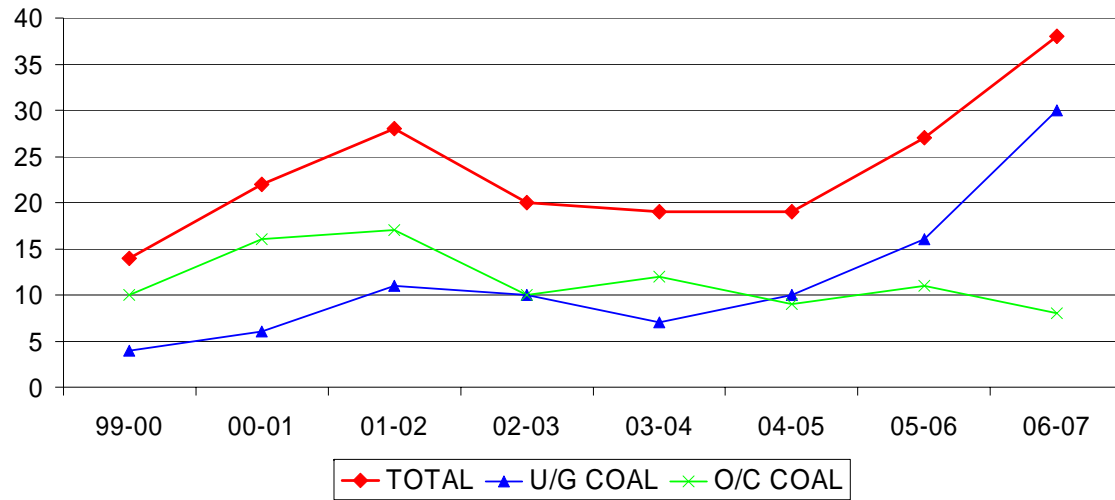
WELDING ELECTRIC SHOCKS - SOURCE



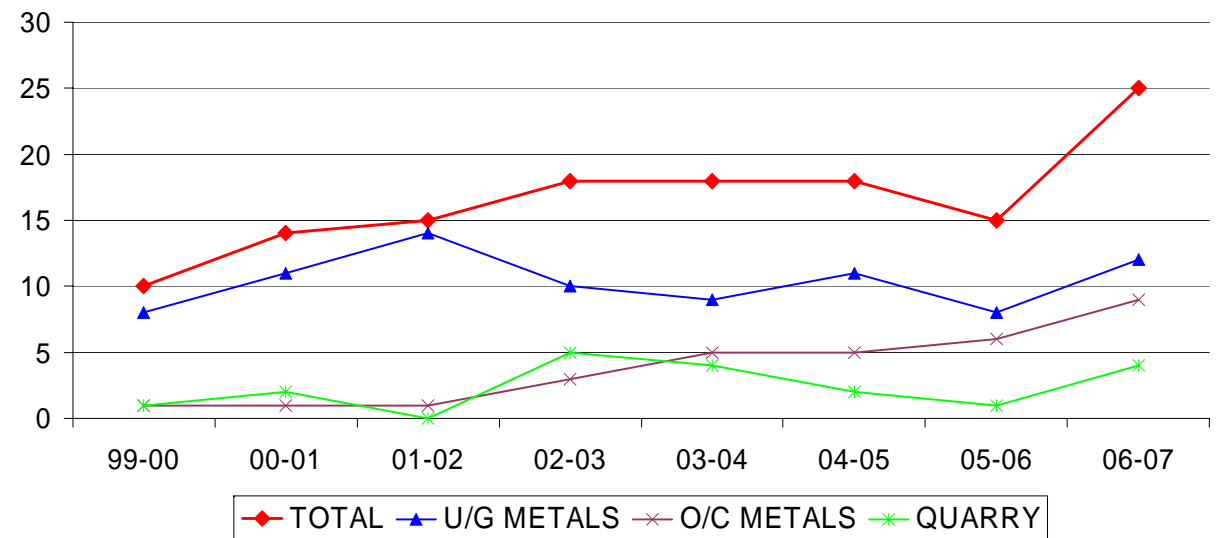
TOTAL ELECTRIC SHOCKS (EXCLUDES WELDING)



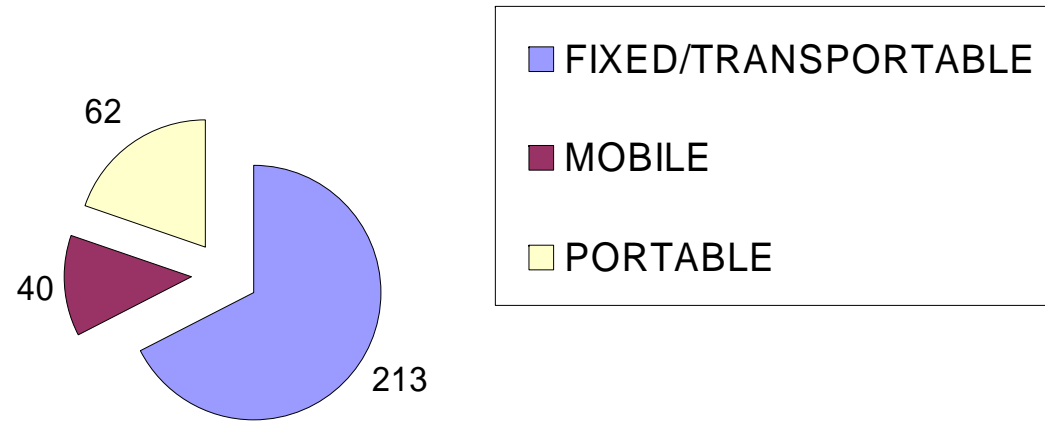
ELECTRIC SHOCKS - COAL



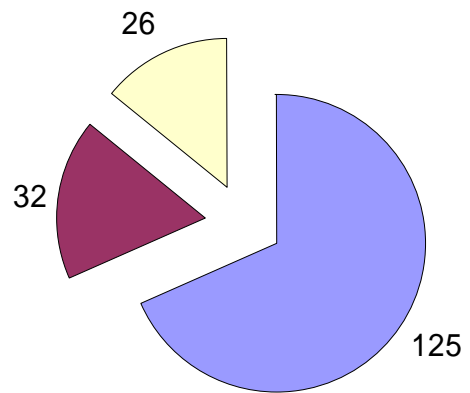
ELECTRIC SHOCKS - METALS + EXTRACTIVES



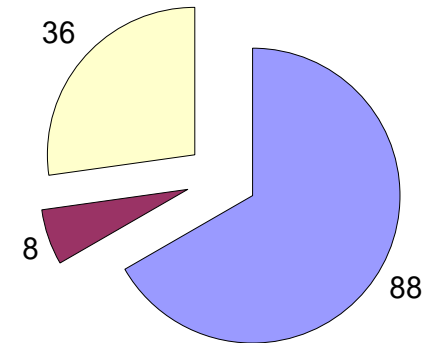
ALL MINES - EQUIPMENT TYPE



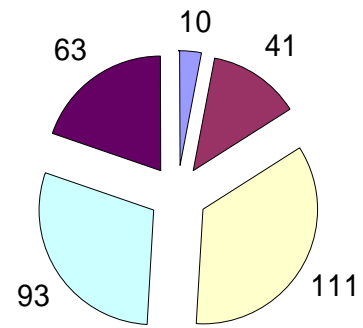
COAL - EQUIPMENT TYPE



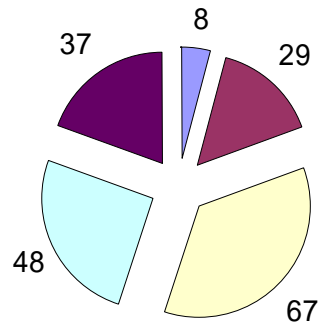
METALS & EXTRACTIVES - EQUIPMENT TYPE



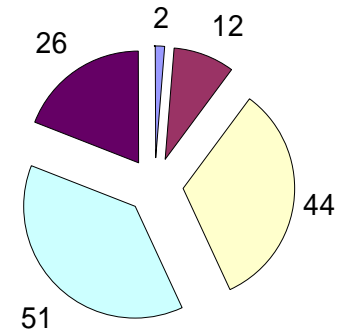
ALL MINES - EQUIPMENT CATEGORY



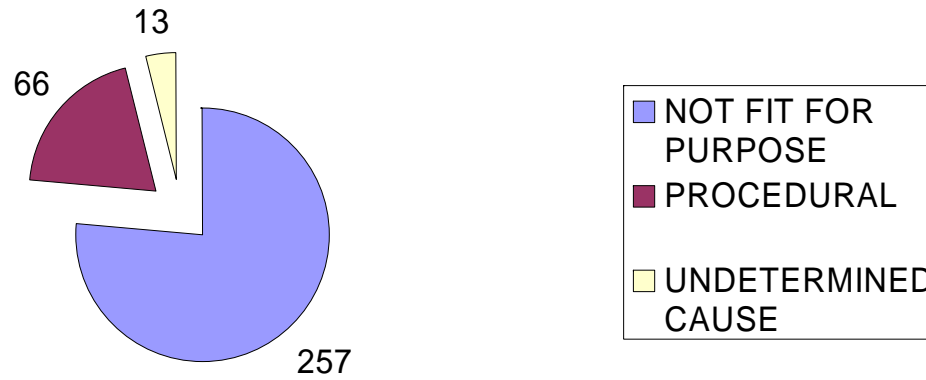
COAL - EQUIPMENT CATEGORY



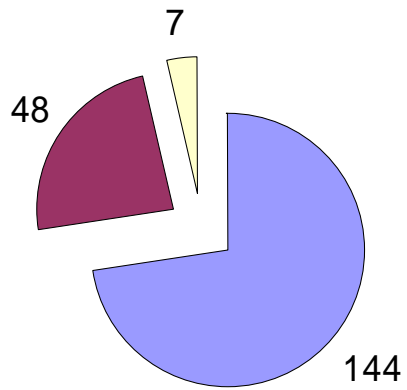
METALS & EXTRACTIVES - EQUIPMENT CATEGORY



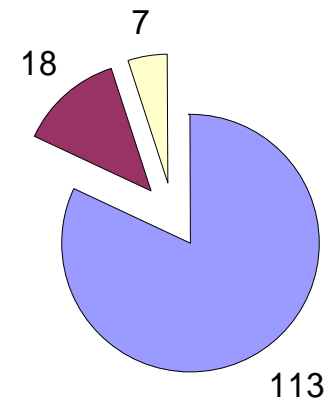
ALL MINES - CAUSAL FACTOR



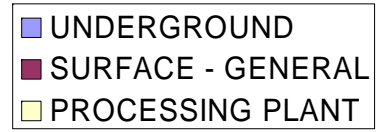
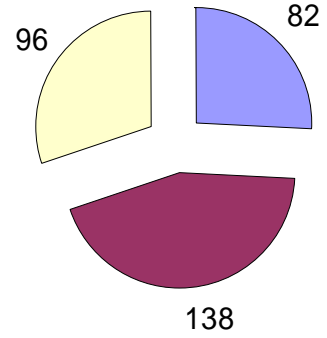
COAL - CAUSAL FACTOR



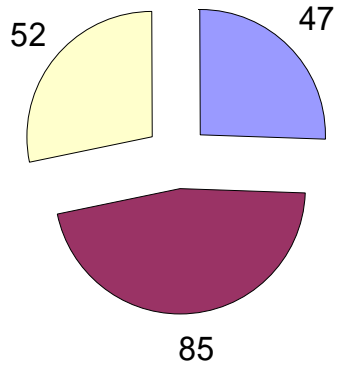
METALS & EXTRACTIVES - CAUSAL FACTOR



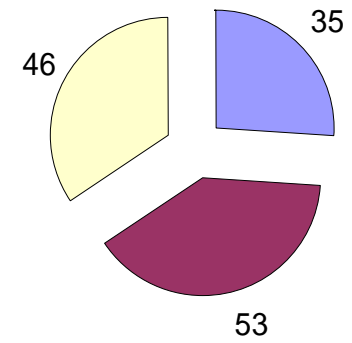
ALL MINES - LOCATION



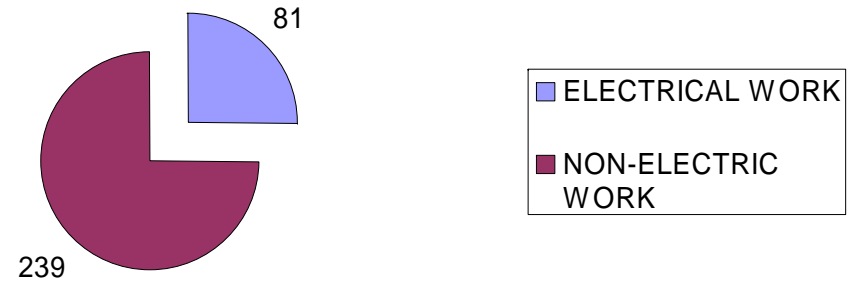
COAL - LOCATION



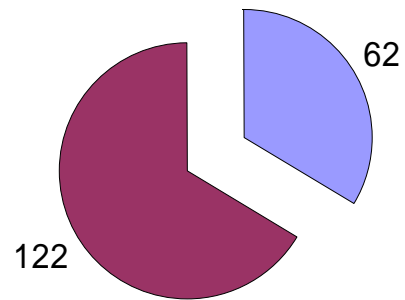
METALS & EXTRACTIVES - LOCATION



ALL MINES - TYPE OF WORK



COAL MINES - TYPE OF WORK



METALS & EXTRACTIVES - TYPE OF WORK

